

IN THE CLAIMS

Please cancel claims 1-8 without prejudice.

Please add the following new claims 9-16:

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9. (New) Freeze-drying apparatus for foodstuffs and medicaments, which comprises: a main body part constructed by assembling an upright cylindrical tube for freezing liquid material onto said main body part, and a cylindrical jacket provided concentrically on and around said tube to permit heat medium to circulate within said tube; a duct communicating to a vacuum exhaust system connected to an upper end side of said tube of the main body; either directly or through a chamber; a recovery chamber equipped with a valve connected to a bottom part of said tube; and an inlet port defined in an upper or lower part of said tube for feeding the liquid material into said tube by connection of said tube to a tubepassageway for feeding said liquid material.

10. (New) Freeze-drying apparatus for food stuffs and medicaments, according to claim 9, wherein said main body part of said freeze-drying apparatus constructed by assembling said upright cylindrical tube and said cylindrical jacket concentrically on and surrounding said tube is mounted on a machine frame by juxtaposing said tube in multiple series; then, in the juxtaposed position, the ducts communicating to the vacuum exhaust system are

connected to the upper end side of each said tube in said main body part, either directly or through the chamber; while the recovery chamber equipped with a valve on the bottom part of the tube is connected to each said tube; and an inlet port for feeding the liquid material into an inner cavity of said tube is defined on the upper or lower part of each said tube by connection of the tube to the tubepassageway for feeding said liquid material.

11. (New) Freeze-drying apparatus for food stuffs and medicaments, according to claim 9, wherein said main body part of said freeze-drying apparatus constructed by assembling said upright cylindrical tube and said cylindrical jacket concentrically on and surrounding said tube is mounted in a plurality of numbers, on a machine frame by juxtaposing each said tube in multiple series; then the upper end side of each said tube in the main body is made to open to the duct communicating to the vacuum exhaust system supported on said machine frame, or is made to open to the chamber connected to said duct; and, the recovery chamber equipped with the valve on the bottom part of each said tube is connected to each said tube; and an inlet port for feeding the liquid material into an inner cavity of each said tube is defined in said ducts or said chamber connected to said ducts.

12. (New) Freeze-drying apparatus for food stuffs and medicaments, according to claim 9, wherein said jacket is provided on an outer periphery of the tube and is divided into a plurality of sections in a vertical direction; and said heat medium to be circulated within said tube is controlled to a desired temperature level for each section as divided.

13. (New) Freeze-drying apparatus for food stuffs and medicaments, according to claim 10, wherein said main body part of said freeze-drying apparatus, constructed by assembling said upright cylindrical tubes and cylindrical jacket concentrically on and surrounding each said tube, is juxtaposed in multiple series and is mounted on said machine frame; and the upper end side of each said tube is communicatively connected to said ducts leading to said vacuum exhaust system through freely openingclosing valve.

14. (New) Freeze-drying apparatus for food stuffs and medicaments, according to claim 13, wherein said main body part of said freeze-drying apparatus, constructed by assembling said upright cylindrical tubes and the cylindrical jackets concentrically on and surrounding said tubes is juxtaposed in multiple series and mounted on said machine frame, said jacket to be provided on an outer periphery of said tube being connected in parallel, through

said freely opening-closing valve, with respect to said tube passageway of the heat medium circulating in the heat exchanger.

15. (New) Freeze-drying apparatus for food stuffs and medicaments, according to claim 14, wherein a downwardly tapering funnel-shaped wall is provided, at a downwardly protruding portion from said jacket surrounding said upright cylindrical tube at a lower end side thereof, in such a manner that the tapered lower end of said funnel-shaped wall is situated below a lower edge of the liquid material to be frozen in the cylindrical shape of said tube.

16. (New) Freeze-drying apparatus for food stuffs and medicaments, according to claim 15, wherein a supporting member is provided in an manner to be fixed at a position, or retractable with said tube, said supporting member being positioned below the lower edge of the liquid material to be frozen onto an inner wall surface of said tube, by being projected from the inner surface of said tube toward the inner cavity thereof, at a lower end side of the upright cylindrical tube.

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